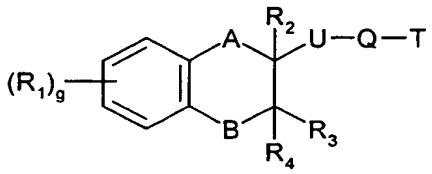
Claims

1. Compounds of formula I



including pharmaceutically acceptable salts thereof in which

A is methylene or -O-;

B is methylene or -O-;

g is 0, 1, 2, 3 or 4;

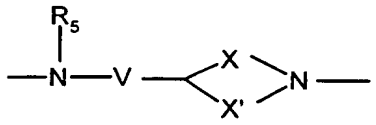
R_1 represents a) halo, b) an alkyl group containing 1 to 3 carbon atoms optionally substituted by one or more halo, c) an alkoxy group containing 1 to 3 carbon atoms optionally substituted by one or more halo, d) an alkylthio group containing 1 to 3 carbon atoms optionally substituted by one or more halo, e) hydroxy, f) an acyloxy group containing 1 to 3 carbon atoms, g) hydroxymethyl, h) cyano, i) an alkanoyl group containing 1 to 6 carbon atoms, j) an alkoxycarbonyl group containing 2 to 6 carbon atoms, k) a carbamoyl group or carbamoylmethyl group each optionally N-substituted by one or two alkyl groups each containing 1 to 3 carbon atoms, l) a sulphamoyl or sulphamoylmethyl group each optionally N-substituted by one or two alkyl groups each containing 1 to 3 carbon atoms, m) an amino group optionally substituted by one or two alkyl groups each containing 1 to 3 carbon atoms; or two adjacent R_1 groups together with the carbon atoms to which they are attached form a fused benz ring, the substituents represented by R_1 being the same or different when g is 2, 3 or 4;

R_2 is H, an alkyl group containing 1 to 3 carbon atoms, or an alkoxy group containing 1 to 3 carbon atoms;

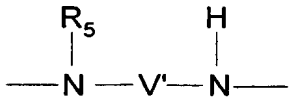
R_3 and R_4, which are the same or different, are H, or an alkyl group containing 1 to 3 carbon atoms;

U is an alkylene chain containing 1 to 3 carbon atoms, optionally substituted by one or more alkyl groups each containing 1 to 3 carbon atoms;

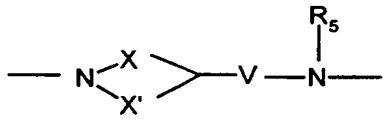
Q represents a divalent group of formula IIa, IIb or IIc



IIa



IIb



IIc

in which V is a bond or an alkylene chain containing 1 to 3 carbon atoms optionally substituted by one or more alkyl groups each containing 1 to 3 carbon atoms;

V′ is an alkylene chain containing 2 to 6 carbon atoms, optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

X is an alkylene chain containing 0 to 2 carbon atoms and X′ is an alkylene chain containing 1 to 4 carbon atoms provided that the total number of carbon atoms in X and X′ amounts to 3 or 4;

R_5 is H or an alkyl group containing 1 to 3 carbon atoms; and

T represents an aromatic group optionally containing one or more N atoms and optionally substituted by one or more substituents selected from halo, an alkyl

group containing 1 to 3 carbon atoms, an alkoxy group containing 1 to 3 carbon atoms, or a polyhalogenated alkyl group, or T represents benzo[b]furanyl or benzodioxanyl with the proviso that T is not 2-pyrimidinyl when A is –O-; for use in reducing cravings to food or an addictive substance.

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2. The use of compounds of formula I as claimed in claim 1 wherein A is -O-.

3. The use of compounds of formula I as claimed in any preceding claim wherein B is -O-.

4. The use of compounds of formula I as claimed in any preceding claim wherein g is 0, 1 or 2.

5. The use of compounds of formula I as claimed in any preceding claim wherein R_1 represents halo, an alkyl group containing 1 to 3 carbon atoms, an alkoxy group containing 1 to 3 carbon atoms, hydroxy, or two adjacent R_1 groups together with the carbon atoms to which they are attached form a fused benz ring.

6. The use of compounds of formula I as claimed in any preceding claim wherein R_1 represents methoxy, fluoro, chloro, hydroxy, or two adjacent R_1 groups together with the carbon atoms to which they are attached form a fused benz ring.

7. The use of compounds of formula I as claimed in any preceding claim wherein R_2 is H or an alkyl group containing 1 to 3 carbon atoms.

8. The use of compounds of formula I as claimed in any preceding claim wherein R_3 and R_4, which are the same or different, are H or methyl.

9. The use of compounds of formula I as claimed in any preceding claim wherein T is pyridyl, pyrimidinyl, pyrazinyl, phenyl, benzofuryl, 1,4-benzodioxanyl or quinazolinyl all optionally substituted by methoxy, trifluoromethyl, or halo.

10. The use of compounds of formula I as claimed in any preceding claim wherein T is 2-pyridyl, 2-pyrimidinyl, 2-pyrazinyl, phenyl, 2,3-dihydrobenzo[b]furan-7-

contd. a1

yl, 1,4-benzodioxan-5-yl or 4-quinazolinyl all optionally substituted by methoxy, trifluoromethyl, or halo.

11. The use of compounds of formula I as claimed in any preceding claim wherein R_5 is H or methyl.

12. The use of compounds of formula I as claimed in claim 1 which are:

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(pyrazin-2-yl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(3-chloropyrid-2-yl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(quinazolin-4-yl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(pyrid-2-yl)piperid-4-yl]methylamine;

N-(8-Methoxy-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-N'-[3-(trifluoromethyl)-2-pyridyl]ethanediamine;

N-(8-Methoxy-1,2,3,4-tetrahydronaphth-2-ylmethyl)-1-[1-pyrimidin-2-yl)piperid-4-yl]methylamine;

7-{N-[1-(Pyrimidin-2-yl)piperid-4-ylmethyl]aminomethyl}-5,6,7,8-tetrahydronaphth-1-ol;

N-(5-Methoxy-3,4-dihydro-2H-1-benzopyran-3-ylmethyl)-1-[1-(pyrimidin-2-yl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-(1-phenylpiperid-4-yl)methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(1,4-benzodioxan-5-yl)piperid-4-yl]methylamine;

1-[1-(1,4-Benzodioxan-2-ylmethyl)piperid-4-yl]-N-(2-methoxyphenyl)methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(4-methoxyphenyl)piperid-4-yl]methylamine;

N-(8-Methoxy-1,4-benzodioxan-2-ylmethyl)-N'-(2-methoxyphenyl)-1,3-propanediamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(3-methoxyphenyl)piperid-4-yl]methylamine;

N-(6,7-Dichloro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

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N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(2-chlorophenyl)piperid-4-yl]methylamine;

N-(5-Fluoro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(8-Fluoro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

1-[1-(2-methoxyphenyl)piperid-4-yl]-N-(naphtho[1,2-b]dioxan-2-ylmethyl)methylamine;

1-[1-(2,3-Dihydrobenzo[b]furan-7-yl)piperid-4-yl]-N-(8-methoxy-1,4-benzodioxan-2-ylmethyl)methylamine;

N-(6-Chloro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(7-Chloro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(8-hydroxy-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

and pharmaceutically acceptable salts thereof in the form of individual enantiomers, racemates, or other mixtures of enantiomers.

13. The use of compounds of formula I as claimed in claim 12 which are:-

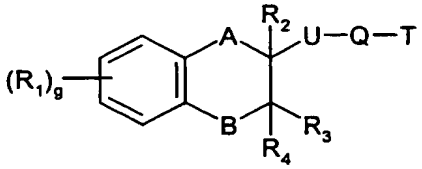
(S)-(-)-N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

(R)-(+)-N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

(-)-N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(pyrid-2-yl)piperid-4-yl]methylamine dihydrochloride;

(+)-N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(pyrid-2-yl)piperid-4-yl]methylamine dihydrochloride.

14) The use of compounds of formula I



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and pharmaceutically acceptable salts thereof in the form of individual enantiomers, racemates, or other mixtures of enantiomers, in which

A is -O-;

B is -O-;

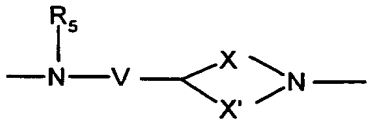
g is 0 or 1;

R_1 represents halo, an alkyl group containing 1 to 3 carbon atoms, an alkoxy group containing 1 to 3 carbon atoms, or hydroxy;

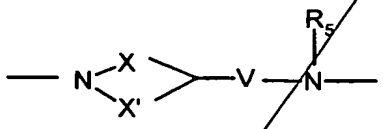
R_2, R_3 and R_4 are each H;

U is methylene;

Q is a group of formula IIa or IIc



IIa



IIc

in which V is methylene or ethylene; X is an alkylene chain containing 0 to 2 carbon atoms and X′ is an alkylene chain containing 1 to 4 carbon atoms provided that the total number of carbon atoms in X and X′ amounts to 3 or 4; and R_5 is H; and

T is pyridyl, pyrazinyl, phenyl, benzo[b]furanyl, 1,4-benzodioxanyl, or quinazolinyl all optionally substituted by methoxy, trifluoromethyl, or halo; for use in reducing cravings to food or an addictive substance.

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15) The use of compounds of formula I as claimed in claim 14 wherein R_1 represents methoxy, fluoro, chloro or hydroxy.

16) The use of compounds of formula I as claimed in claim 14 wherein T is 2-pyridyl, 2-pyrazinyl, phenyl, 2,3-dihydrobenzo[b]furan-7-yl, 1,4-benzodioxan-5-yl or 4-quinazolinyl all optionally substituted by methoxy, trifluoromethyl, or halo.

17) The use of compounds of formula I as claimed in claim 14 selected from:

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(pyrazin-2-yl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(3-chloropyrid-2-yl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(quinazolin-4-yl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(pyrid-2-yl)piperid-4-yl]methylamine;

N-(8-Methoxy-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-(1-phenylpiperid-4-yl)methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(1,4-benzodioxan-5-yl)piperid-4-yl]methylamine;

1-[1-(1,4-Benzodioxan-2-ylmethyl)piperid-4-yl]-N-(2-methoxyphenyl)methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(4-methoxyphenyl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(3-methoxyphenyl)piperid-4-yl]methylamine;

N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(2-chlorophenyl)piperid-4-yl]methylamine;

N-(5-Fluoro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(8-Fluoro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

1-[1-(2,3-Dihydrobenzo[b]furan-7-yl)piperid-4-yl]-N-(8-methoxy-1,4-benzodioxan-2-ylmethyl)methylamine;

N-(6-Chloro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

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N-(7-Chloro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

N-(8-hydroxy-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

and pharmaceutically acceptable salts thereof in the form of individual enantiomers, racemates, or other mixtures of enantiomers.

18) The use of compounds of formula I as claimed in claim 14 which are:-

(S)-(-)-N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

(R)-(+)-N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

(-)-N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(pyrid-2-yl)piperid-4-yl]methylamine dihydrochloride;

(+)-N-(1,4-Benzodioxan-2-ylmethyl)-1-[1-(pyrid-2-yl)piperid-4-yl]methylamine dihydrochloride.

19) The compound of formula I as claimed in claim 14 which is:

N-(7-Chloro-1,4-benzodioxan-2-ylmethyl)-1-[1-(2-methoxyphenyl)piperid-4-yl]methylamine;

and pharmaceutically acceptable salts thereof in the form of individual enantiomers, racemates, or other mixtures of enantiomers.

20. The use of pharmaceutical compositions comprising a therapeutically effective amount of a compound of formula I, together with a pharmaceutically acceptable diluent or carrier in reducing cravings to food or an addictive substance.

21. A method of reducing cravings to food or an addictive substance which comprises the administration of a therapeutically effective amount of a compound of formula I as claimed in any of claims 1 to 19 to a patient in need thereof.

22. A method as claimed in claim 15 wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.

~~23.~~ The use of a compound of formula I as claimed in any of claims 1 to 19 ~~in the~~ manufacture of a medicament for use ~~in reducing~~ cravings to food or an addictive ~~substance~~.